

PATIENT
 Bear Haugen

PRESENTING CLINICAL SIGNS

History: Vomiting daily for 6 months some days up to 10 times a day. Weight loss.
 Current Medications Furosemide 12.5mg (has not helped).

SPECIES
 Canine

RADIOGRAPHIC FINDINGS *NOTE: Images submitted for supplemental cardiac information only.
 Cardiomegaly. No obvious evidence of CHF.

BREED
 Dachshund

ELECTROCARDIOGRAPHIC FINDINGS *Note: Single lead ECGs are evaluated as a rhythm strip.
 Morphology/MEA cannot be definitively commented on.
 A single lead ECG is available; 50mm/s, 10mm/mV. The average heart rate is 240bpm (range 200-270bpm). No identifiable P waves with an irregularly irregular rhythm.
 ECG diagnosis: Rapid atrial fibrillation.

SEX
 Male Neutered

ECHOCARDIOGRAM FINDINGS

2D, m-mode, color flow and doppler imaging is available. Diffuse thickening of mitral valve leaflets with mild prolapse into the left atrial lumen. Moderate central mitral regurgitation with severe left atrial dilation. Mild LV diameter with depressed myocardial function. The tricuspid valve appears mildly thickened, with mild central tricuspid regurgitation. TR velocity consistently with mild pulmonary hypertension. Moderate right heart dilation. The pulmonic and aortic valves are normal in morphology and mobility. No aortic or pulmonic insufficiency. No pericardial effusion. No pleural effusion noted. No cardiac tumors observed. Rapid irregular rhythm throughout.

AGE
 9 years

WEIGHT
 11lbs

CARDIAC CHART

INTERPRETED BY

Maggie Machen
 Lamy, DVM, DACVIM
 (Cardiology)

IMAGING PERFORMED BY

Jenna Walsh, CVT

HOSPITAL NAME

Vetco Total Health
 South Salem

REFERRING VET

Dr. Joynt

INVOICE

24827

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6/16/22

CANINE CARDIAC PARAMETERS	MR VMAX (m/s)	TR VMAX (m/s)	LA/AO (Boon method)	LA/AO (Heart Base; Swe)	FS (%)	EF (%)	EPSS (cm)
NORMAL PARAMETER	4.5-5.5	<2.7	1.3	<1.6	28-40	40-100	<0.6
PATIENT	4.8	3.2	NM	2.2	26	50	0.5
CANINE CARDIAC PARAMETERS	HR (BPM)	AV VMAX (m/s)	PV MAX (m/s)	BODY WEIGHT (kg)	LA 2D short axis Base view (cm)	LVIDd Avg; 2D and m-mode short axis (cm)	LVIDs Avg; 2D and m-mode short axis (cm)
NORMAL PARAMETER	50-100	0.7-1.7	0.7-1.6	BELOW	BELOW	BELOW	BELOW
PATIENT	NM	1.0	0.6	5.0	2.8	3.1	2.3
*Normal chamber parameters expressed as a mean value (SD)				3	1.27 (5.3)	2.46 (2.46)	1.36 (5.5)
BODY WEIGHT DEPENDENT PARAMETERS				5	1.40 (4.5)	2.74 (5.2)	1.60 (4.7)
				10	1.50 (3.8)	3.27 (3.5)	2.06 (3.1)
Adapted from June Boon, Veterinary Echocardiography, 1998				15	1.83 (2.0)	3.71 (2.4)	2.43 (2.1)
Rishniw M and Hollis NE, J Vet Intern Med 2000; 14:429-435				20	2.02 (1.9)	4.14 (2.2)	2.80 (2.0)
Hansson et al, Vet Rad and Ultrasound 2002				25	2.18 (2.4)	4.48 (2.9)	3.10 (2.5)
Bonagura et al. Echocardiography: principles of interpretation, Vet Clin North Am 15:1177, 1995				30	2.33 (3.3)	4.83 (3.9)	3.39 (3.4)
				35	2.48 (4.3)	5.17 (5.0)	3.69 (4.5)
				40	2.62 (5.2)	5.48 (6.1)	3.96 (5.4)
				50	2.88 (7.1)	6.07 (8.3)	4.46 (7.4)



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INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

The underlying disease in this case could be argued. The FS is certainly depressed for this signalment; however, the quantity of MR and TR is only moderate and this may be affected by the rapid HR. There is a mismatch between these findings and significant biatrial enlargement, also likely exacerbated by the arrhythmia. Given the breed, a primary valvular issue is most likely; however, it is unusual to see significant systolic dysfunction. Consider contributing issues, such as an atypical diet, myocarditis, etc. Regardless, the degree of disease is severe with biatrial enlargement. This would suggest the patient is at high risk for right or left-sided CHF, development of arrhythmias and/or sudden death.

The ECG is consistent with rapid atrial fibrillation (AF), which has presumably developed secondary to cardiac disease. No obvious CHF is noted on the ultrasound, history, or chest radiographs (no respiratory changes); however, full cardiac support including Lasix therapy is recommended based upon risk. The clinical signs are also atypical of cardiac issues and further evaluation/treatment may be beneficial pending abdominal ultrasound results.

AF is characterized by disorganized contractions of the atria leading to an irregular heart rhythm. The irregular heart rhythm rarely causes clinical signs in dogs. However, atrial fibrillation also usually causes an increase in the heart rate as is seen here, and this leads to clinical signs and ultimately CHF. Development of rapid AF and CHF requires lifelong diuretics and management of the structural disease in addition to the arrhythmia.

Unfortunately, dogs with rapid AF and severe disease are at high risk for complications such as congestive heart failure, malignant arrhythmias, left atrial tear and sudden death. Medications and close monitoring will help give the best prognosis possible, however the average survival time with this condition is 6-12 months.

Goals of therapy include correcting water retention, improving myocardial contractility, afterload reduction, and heart rate control. If the patient has appeared clinically unstable or in respiratory distress, emergency hospitalization for rate control, diuresis and oxygen support is recommended. The target heart rate is 140-160bpm in hospital.

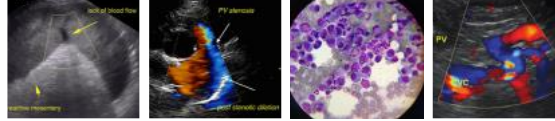
Please monitor at home for cough, lethargy, inappetance, collapse/fainting episodes or increase in respiratory rate or effort. Monitoring of sleeping breathing rates is recommended to screen for recurrent CHF at home. Moderate activity restriction is advised. Omega fatty acid supplementation and mild salt restriction may be of some long-term benefit.

PLAN

Consider hospitalization for IV rate control and oxygen support if needed. Oral medications: Institute Pimobendan 0.3mg/kg PO q12h. Institute Furosemide 1-2mg/kg PO q12h. Institute spironolactone 1-2mg/kg PO q12h. Institute Diltiazem 12mg/kg PO q8 hours. Further systemic evaluation/treatment pending AUS results. Suggest diet history as discussed.

Recheck renal panel, heart rate/ECG and BP in 5-7 days with target being 140-160bpm in hospital (stressed). Up- titrate to effect (if difficult to control, can consider addition of digoxin as well). If BP >130mmHg and doing well at home, institute ACE-I 20mg PO q12h. If hypotensive, do not utilize until normotensive (if ever).

Monitor renal values every 3-4 months lifelong. A recheck ECG and echocardiogram is recommended in 4-6 months to screen for progression.



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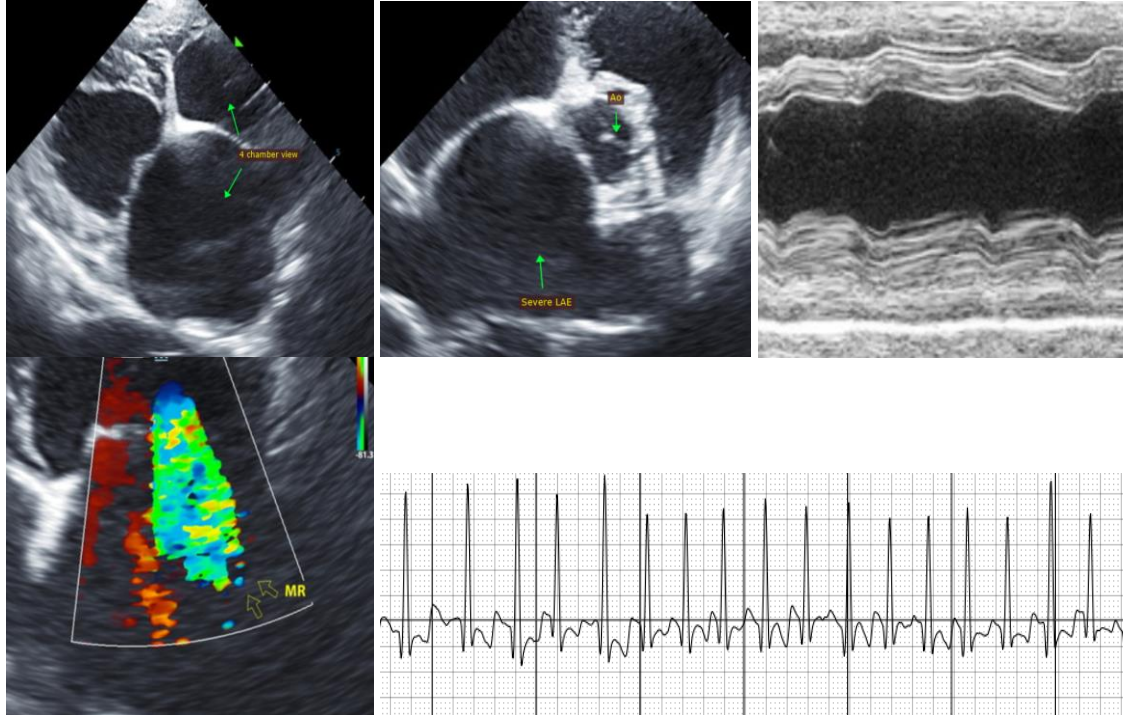
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IMAGES



The information and recommendations provided are based on the images presented by the referring veterinarian. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

Thank you for this referral. This report was generated using transcription software, and minor dictation errors may be present. If the clinical or image interpretation does not parallel your findings or if I can be of any further assistance, please contact me.

Maggie Machen Lamy, DVM
 Diplomate of the American College of Veterinary Internal Medicine (Cardiology)
 info@sonopath.com